FROM THE LIBRARY SHELF

Phyllis Schiller Myers
Virginia Commonwealth University

RISK PERCEPTION AND ECONOMIC BEHAVIOR

The Effects of Risk Aversion on Wagering: Point Spread versus Odds, by Bill M. Woodland and Linda M. Woodland (Eastern Michigan University)

Currently, casinos and bookies use the point-spread method for betting on football games. Since an odds system is used in various other sports, what factors explain the current structure of the betting market? As the bookie's profits are a percentage of the total money wagered, the existence of point-spread betting indicates that the total money wagered under this betting scheme is greater than that generated by odds betting. This paper suggests that the current market structure is a consequence of risk-averse attitudes of bettors. *Journal of Political Economy*, Vol. 99, No. 3 (June 1991), pp. 638–53. (Reprinted with permission of The University of Chicago Press).

PROBABILITY THEORY

On Blocked Poisson Processes in Risk Theory, by Colin M. Ramsay (University of Nebraska-Lincoln)

We consider an insurance risk which has a propensity to produce claims in a Poisson process. However, upon the occurrence of each claim, the risk is blocked (immune) from producing more claims for a certain period of time. The length of the blocked period is assumed to be a random variable. Upon the expiration of each blocking period, the risk resumes its propensity to produce claims. It is assumed that the duration of the blocking period depends on the size of the claim producing the blocked period. Let $S(t)$ be the aggregate claims produced in the time period $(0,t]$. An expression for the moment generating function of $S(t)$ is given. It is proved that $E[S(t)] = E[X_i]E[N(t)]$, where X_i is the size of the ith claim and $N(t)$ is the number of claims in $(0,t]$. The asymptotic normality of $S(t)$ is established. *Insurance: Mathematics and Economics*, Vol. 10, No. 1 (March 1991), pp. 1–8. (Reprinted with permission of the North-Holland Publishing Company).

Negative Claim Amounts, Bessel Functions, Linear Programming and Miller's Algorithm, by Werner Hürlimann (Winterthur-Leben, Winterthur, Switzerland)

This work is concerned with the evaluation of aggregate claims distributions allowing negative claim amounts, as one encounters them in life insurance for example. The main results apply to the collective as well as to the individual model of risk theory. Using the method proposed by Chan (1984), it is shown that some compound distributions with a two-sided claim size distribution satisfy a linear difference equation of infinite order. In the particular compound Poisson case an interesting formula involving generalized modified Bessel functions is derived. Independent differences of two random variables taking values in the non-negative integers are shown to be pseudo compound Poisson in the sense of Hürlimann (1985) and Sundt (1986). In particular computation and approximation errors can be controlled using a 'stop-loss error function'. The second approximation uses a linear program to solve linear difference equations. In the simplest case Miller's algorithm to compute modified Bessel functions is recovered as a special case. *Insurance: Mathematics and Economics*, Vol. 10, No. 1 (March 1991), pp. 9–20. (Reprinted with permission of the North-Holland Publishing Company).

RUIN THEORY

Risk Theory for the Compound Poisson Process That is Perturbed by Diffusion, by Francois Dufresne (Université Laval, Québec) and Hans U. Gerber (Université de Lausanne, Switzerland).

The classical model of collective risk theory is extended in that a diffusion process is added to the compound Poisson process. It is shown that the probabilities of ruin (by oscillation or by a claim) satisfy certain defective renewal equations. The convolution formula for the probability of ruin is derived and interpreted in terms of the record highs of the aggregate loss process. If the distribution of the individual claim amounts are combinations of exponentials, the probabilities of ruin can be calculated in a transparent fashion. Finally, the role of the adjustment coefficient (for example, for the asymptotic formulas) is explained. *Insurance: Mathematics and Economics*, Vol. 10, No. 1 (March 1991), pp. 51–59. (Reprinted with permission of the North-Holland Publishing Company).

HEALTH CARE AND INSURANCE

The Health Care Quadrilemma: An Essay on Technological Change, Insurance, Quality of Care, and Cost Containment, by Burton A. Weisbrod (Northwestern University)

This paper explains how the expansion of health care insurance has paid for the development of cost-increasing technologies, and how the new technologies have expanded demand for insurance. My goal is less to review the vast

literature on the health care system and the rising level of real expenditures on it, than to reflect on the dynamic interplay of incentives for the R & D sector to develop particular kinds of new technologies, the role of the insurance system in that process, and, reciprocally, the long-run effects of new technologies (any new knowledge about health care) on the character of the health care insurance system. The broad model outlined here highlights the ways in which the quality of health care that is technically feasible to supply at any point in time, and the breadth of access to that care, influence each other and the aggregate level of health care expenditures, but the model is not fully specified, nor is it tested rigorously. Thus, this essay should be seen as a personal interpretation—largely positive, rather than normative, in character—of a period of enormous growth and massive change in both the practice and finance of health care. *Journal of Economic Literature*, Vol. XXIX, No. 2 (June 1991), pp. 523–52. (Reprinted with permission of the *Journal of Economic Literature*).

Health Plan Choice and the Utilization of Health Care Services, by Bryan Dowd and Roger Feldman (University of Minnesota), Steven Cassou (State University of New York), and Michael Finch (University of Minnesota)

The effect of health plan membership on the utilization of health care services is of interest to both consumers and policy makers. Often, estimation of that effect is difficult because data are non-experimental and the dependent variable exhibits a high proportion of zeros. We propose a model of utilization that addresses both problems. After controlling for chronic illness and other observed variables, we find no evidence of further selectivity bias in equations for physician contacts and inpatient days. Our estimates of the effect of health plan membership on utilization of services are similar to those from experimental data. *The Review of Economics and Statistics*, Vol. LXXIII, No. 1 (February 1991), pp. 85–93. (Reprinted with permission of the North-Holland Publishing Company).

SOCIAL INSURANCE

Can the Social Security Trust Fund Contribute to Savings? by L.R. Wray

In the conventional view, the Social Security trust fund should be set aside so it can add to national saving, rather than being used to reduce the size of the governments deficit in the rest of its budget. In contrast, this article argues that the government's deficit is a primary *source* of the income that is taxed to generate the trust fund. Furthermore, the trust fund is a leakage that reduces aggregate effective demand, prohibits achievement of full employment, and reduces society's ability to provide for future retirees. Thus, economists should advocate its abolishment through reduction of payroll taxes. *Journal of Post Keynesian Economics*, Vol 13, No. 2 (Winter 1990–91), pp. 155–70. (Reprinted with permission of the *Journal of Economic Literature*).

Using Hospital-Specific Costs to Improve the Fairness on Prospective Reimbursement, by G.C. Pope

Payment rates in Medicare's prospective payment system are based on averages of historical hospital costs. Compared to reimbursing each hospital's own costs, pricing at the average of costs implies a massive redistribution of payments among hospitals. Because not all sources of hospital costs are accounted for in the prospective payment system, some of this redistribution is "unfair." Information in hospital-specific costs on unmeasured patient severity and input prices can be exploited to reduce payment inequities. However, fully hospital-specific rates are not optimal because costs also reflect treatment intensity and efficiency differences among hospitals. *Journal of Health Economics*, Vol. 9, No. 3 (November 1990), pp. 237–51. (Reprinted with permission of the *Journal of Economic Literature*).

The Effects of Unemployment Compensation in General Equilibrium with Search Unemployment, by B. Axell and H. Lang

It is shown that when the effects of an increase in unemployment subsidies are studied in a general equilibrium framework, unemployment increases far less than in a "partial-partial" model. In fact, the result may very well be a *decrease* in unemployment if the "general equilibrium forces" are strong enough. In the model used in this paper an increase in unemployment compensation unambiguously *decreases* the rate of unemployment. *Scandinavian Journal of Economics*, Vol. 92, No. 4 (1990), pp. 531–40. (Reprinted with permission of the *Journal of Economic Literature*).

EMPLOYEE BENEFITS

The Effect of Fringe Benefits on Employment Fluctuations in U.S. Automobile Manufacturing, by David J. Smyth (Louisiana State University) and Stephen H. Karlson (Northern Illinois University)

We present a theoretical and empirical analysis of employment adjustment by . U.S. automobile manufacturers. The model allows for variable elasticities of substitution among labor and other inputs and between hours and workers. We use total compensation as our measure of labor cost. Our labor effectiveness function has diminishing marginal returns to hours. The speed of employment adjustment depends on the relative costs of straight-time and overtime hours.

Fringe benefits affect the relative costs of regular and overtime hours. They play a key role in determining the equilibrium employment and hours, and the speed at which employers adjust employment to equilibrium. Increases in fringe benefits in recent years induced employers to schedule considerable overtime while simultaneously laying off workers. *The Review of Economics and Statistics,* Vol. LXXIII, No. 1 (February 1991), pp. 40–9. (Reprinted with permission of the North-Holland Publishing Company).

ESOPs and Corporate Control, by Lilli A. Gordon (Analysis Group, Inc., Belmont, MA) and John Pound (Harvard University)

This paper examines the effects of employee stock ownership plans (ESOPs) on shareholder wealth. ESOPs established in the presence of takeover activity reduce share values, by approximately 4% on average. ESOPs also reduce share values if they are structured to transfer control away from outside shareholders, by creating a new ownership block with veto power over control transfers, result in a significant increase in share values. The wealth effect of any given ESOP thus depends upon both its incentive and control effects on the corporation. *Journal of Financial Economics*, Vol. 27 (1990), pp. 525–55. (Reprinted with permission of the North-Holland Publishing Company)..

PENSIONS AND RETIREMENT

The Efficiency of Unfunded Pension Schemes, by S. Homburg

Public pension schemes can be designed either as capital reserve systems or as unfunded (or pay-as-you-go) schemes. In the literature, it has been alleged that unfunded schemes are intergenerationally efficient in Pareto's sense. Here the author shows that this holds only if contributions to the system are levied as lump-sum taxes. But, in reality, flat-rate income taxes are normally used instead—and, then, an unfunded scheme induced distortions and can completely be abolished in finite time without inflicting damage upon any generation. *Journal of Institutional and Theoretical Economics*, Vol. 146, No. 4 (December 1990), pp. 640–47. (Reprinted with permission of the *Journal of Economic Literature*).

FINANCIAL PLANNING

Aging and the Income Value of Housing Wealth, by Steven F. Venti and David A. Wise (Harvard University)

The potential of reverse annuity mortgages to increase the current income of the elderly is analyzed. We conclude that most low-income elderly also have little housing equity. In general, a reverse annuity mortgage would substantially affect the income only of the single elderly who are very old—whose life expectancy is short. On the other hand, if the transfer were in the form of a lump-sum payment, rather than an annuity, the payment would increase the liquid wealth of most elderly families by a large fraction. Thus legislation that would facilitate the market for reverse mortgages could improve substantially the financial status of a small proportion of the elderly. *Journal of Public Economics*, Vol. 44, No. 3 (April 1991), pp. 371–97. (Reprinted with permission of the North-Holland Publishing Company).

INSURER MANAGEMENT AND REGULATION

On the Estimation of Reserves From Loglinear Models, by R. J. Verrall (City University, London, UK)

This paper considers the estimation of claims reserves and outstanding claims when a loglinear model is applied. Unbiased estimators are derived and these are compared with maximum likelihood and actuarial estimators. The set of loglinear models considered includes the commonly used chain ladder model. An example is given illustrating the results for the chain ladder model. *Insurance: Mathematics and Economics*, Vol. 10, No. 1 (March 1991), pp. 75–80. (Reprinted with permission of the North-Holland Publishing Company).

Scale and Scope Economies in the Canadian Property and Casualty Insurance Industry, by Jean Marc Suret (Université Laval, Canada)

This study investigates scale and scope economies in the Canadian property/casualty insurance. Use of the translog cost function allows the estimation of a U-shaped cost curve and of cost elasticities that vary with the size of the insurance company. The model is estimated on a sample of 180 companies over the period 1986 to 1988, and considers four outputs: property, automobile, civil liability, and other types of insurance. The factors of production are labour, rentals, and capital, but the cost of the latter is taken as a constant.

Using data for the years 1986 to 1988, we show that there exists significant economies of scale for insurance companies with assets between $40 and $100 million. However, the evidence in favour of the existence of economies of scale for smaller and larger firms are limited to one year in each case.

We do not observe systematic evidence of significant cost complementarities between insurance products, nor do we note significant economies of scope. No cost complementarities exist between the two main product lines of property/casualty and automobile. Furthermore, there is some evidence of diseconomies of scope. Diversification economies can only be obtained with liability and other product lines.

Our evidence of slight economies of scale and no economies of scope is compatible with observation that many insurance companies in Canada are small and undiversified. *The Geneva Papers on Risk and Insurance*, Vol. 16, No. 59 (April 1991), pp. 236–56. (Reprinted with permission of *The Geneva Paper on Risk and Insurance Theory*).

Productivity Growth, Capital Intensity, and Skill Levels, in the U.S. Insurance Industry, 1948–86, by Edward N. Wolff (New York University)

This paper presents new estimates of labor productivity and total factor productivity (TFP) growth for the U.S. insurance industry, as well as those for the whole economy and selected subsectors, over the 1948–86 period. In addition, industry comparisons are provided for capital intensity, computerization, and skill levels.

The results indicate that labor productivity growth in the insurance industry has been positive over the 1948–86 period, averaging about 0.7 percent per year. In contrast, the growth in TFP, defined as the ratio of output to a weighted average of labor and capital inputs, has actually been negative over

this period. Moreover, the insurance industry has fallen behind other sectors of the economy in terms of productivity growth. From 1948 to 1986, labor productivity growth in the insurance sector has averaged one percentage point per year less than that of the total economy. Growth in TFP has averaged one to two percentage points less, depending on the measure used.

Productivity performance has been quite poor in the insurance industry during the postwar period. This is true despite the rapid growth of capital-intensity in the insurance industry, its high absolute and relative level of computerization, and the high skill level of its work force. *The Geneva Papers on Risk and Insurance*, Vol. 16, No. 59 (April 1991), pp 173–90. (Reprinted with permission of *The Geneva Papers on Risk and Insurance Theory*).

Wealth Effects of Regulatory Reform, by Joseph A. Fields, Chinmoy Ghosh, David S. Kidwell, and Linda S. Klein (University of Connecticut)

This paper investigates the effect of California's Proposition 103 on the market value of publicly traded property- and liability-insurance companies. The passage of this referendum on November 8, 1988 moved California from a market-oriented to a heavily regulated insurance-pricing system. During the period surrounding the election, the average stock price of insurance companies doing business in California declined by 6.91%. The decline is positively related to the proportion of a firm's premiums affected by the referendum and the proportion generated in other states where insurance regulation is likely to change, and negatively related to the firm's profitability. *Journal of Financial Economics*, Vol. 28, No. 1 & 2 (November/December 1990), pp. 233–50. (Reprinted with permission of the North-Holland Publishing Company).

INSURANCE RATEMAKING

Equity and Accuracy in Medical Malpractice Insurance Pricing, by F.A. Sloan and M. Hassan

This study examines alternative classification approaches for setting medical malpractice insurance premiums. Insurers generally form risk classification categories of factors other than the physician's own loss experience. The authors' analysis of such classification approaches indicates different, but no more, categories than now used. An actuarially-fair premium-setting scheme based on the frequency and severity of the individual physician's losses would substantially penalize adverse experience. Alternatively, premiums could be set for groups of physicians, such as hospital medical staffs. The authors' simulations suggest that even staffs at rather small hospitals may be large enough to be experience-rated. *Journal of Health Economics*, Vol. 9, No. 3 (November 1990), pp. 289–319. (Reprinted with permission of the *Journal of Economic Literature*).

LIABILITY RULES

On the Effectiveness of Liability Rules When Agents are Not Identical, by Winand Emons (University of Basel) and Joel Sobel (University of California, San Diego)

This paper is about accidents involving two risk-neutral parties. Both parties engage in actions that are profitable but affect the magnitude of possible bilateral accidents. We analyse how the action choices can be decentralized by liability rules that assign the accident costs to the two parties. If we allow for punitive damages, we can implement the first-best actions by a liability rule even if agents are not identical. Under this liability rule some individuals may be in expectation better off in the event of an accident than in the event of no accident. We provide conditions under which this problem does not arise. *Review of Economic Studies*, Vol. 58 (2), No. 194 (April 1991), pp. 375–90. (Reprinted with permission of The Review of Economic Studies Limited).

LOSS CONTROL

Hazardous Waste Lawsuits, Stockholder Returns, and Deterrence, by M. I. Muoghalu, H. D. Robison, and J. L. Glascock

This paper uses a standard event-study method to measure the impact of hazardous waste mismanagement lawsuits on stockholder returns, a first step in empirically examining the deterrent effect of hazardous waste regulations. Stockholder losses associated with lawsuits average 1.228 percent of firm's market value or 33.3 million dollars. These losses suggest a reduced profitability to mismanaging hazardous wastes, but may be insufficient to deter future mismanagement. Lacking firm-specific data, the deterrent effects of the stockholder losses are examined for a range of hypothetical treatment costs, perceived probabilities of being caught, and time periods until caught. *Southern Economic Journal*, Vol. 57, No. 2 (October 1990), pp. 357–70. (Reprinted with permission of the *Journal of Economic Literature*).